

# Effect of RDI for ameliorating depression in college students: In comparison with Cognitive Therapy

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## Abstract

Sixteen undergraduate students with depressed tendency ( $BDI \geq 13$ : male; 16: female) were assigned in either the RDI(Resource Development and Installation) or the CT(Cognitive Therapy) group. Each client received a 1-2 week self-educating training using an audiotape and/or a worksheet. The RDI group received an audiotape and worksheets with instructions on identifying typical stressful situation, identifying a necessary resource memory with various perceptual modalities, and installing the resource memory with repeated imagery practice. Eye movements were not added in consideration of client safety. The CT group received worksheets with instructions on identifying typical stressful situations, identifying negative cognition, and disputing the cognition by finding rebuttal proofs. At least five times, they were instructed to do the training as homework. Their understanding and compliance was confirmed by reviewing their worksheets.

Dependent variables were BDI (Beck Depression Inventory) and POMS (Profile of Moods Scale). BDI was measured four months before, just before (pretest) and just after the training weeks (posttest), and one month following the posttest. POMS was measured both just before and just after training on both the first and the last day. On the BDI, the only significant effect was observed with regard to the time by  $2(\text{group}) \times 4(\text{time})$  ANOVA. From pretest to posttest, both groups were improved significantly and maintained this level until the follow-up measurement. Regarding changes of POMS,  $2(\text{group}) \times 2(\text{time})$  ANOVA was applied to each subscale on both the first and the last day. On the last day, both groups showed significant or marginally significant improvement in all subscales from start to end of the training, and there was no difference between groups. But, on the first day, significant improvement in vigor and fatigue subscales were found in only the RDI, not in the CT group.

In conclusion, self-educating RDI or CT is effective in ameliorating depressed tendency in relatively normal undergraduate students. Additionally, effectiveness of RDI is almost equal to that of CT, but the rapidity of the effects of RDI is superior to CT. This rapidity could help in maintaining the therapeutic motivation and preventing the client from dropping-out of therapy. Although RDI had been developed as a method for the preparatory phase of trauma-focused EMDR, a wider range of application should be considered.

## Introduction

According to cognitive theory of depression (Beck, 1976), depressed people have an imbalanced ratio between positive and negative cognitions and have a tendency to think about various things in a negative way. In cognitive therapy,

which is well recognized as being effective for reducing depressiveness, negative cognition, which underlies negative emotion, is disputed which leads to therapeutic effects (Rush et al., 1977). When a client focuses on a recent failure, he/she tries to think, "This is a just failure. I have had many successes in the past." But, cognitive therapy has been sometimes criticized as too logical to feel, or understandable in mind but not understandable from the bottom of the heart (Ichii, 2002).

In studies, which investigate the relationship between depression and memory, it is easy to access negative memories and either difficult or impossible to access positive memories when in a depressive state (Williams & Scott, 1998). Therefore, it is reasonable to expect that changing the mood is difficult.

In the solution-focused approach, "finding exception" is the way to access positive memories and it leads to clinical improvement. Clients who tend to focus on negative information, are asked to focus on positive information. They can recall inner strength and increase their self-efficacy (O'Hanlon & Beadle, 1994).

RDI (Resource Development and Installation) which is used in Phase II (Preparation phase) of EMDR standard protocol, is similar to "finding exception" to some degree, but stress is on the imagery techniques, in which clients experience the memory with not only visual, auditory, and tactile aspects, but also with feelings and physical sensations (Leeds & Francine, 2000). RDI is very unique because it creates a deeply real sense of high self-efficacy in the client while he/she recalls the positive memory. Originally RDI was suggested for use with some clients who have many negative memories in order to develop positive resources in preparation for EMDR reprocessing. For those clients, it is very difficult to approach negative memories since it may activate entire negative networks and lead them into a highly unstable state. However, it is not unrealistic to expect that RDI could be used for ameliorating depressed feelings.

In the present study, we will investigate the difference between the effects of cognitive therapy and RDI in ameliorating depression.

## Purpose

In the current study, we compare two methods: sRDI (self-learned RDI) group and sCT (self-learned Cognitive Therapy) group in undergraduate students who have highly depressed tendency. sRDI condition is RDI designed for self-learning in which eye movements are not required in the interest of client safety. Our hypothesis is:

Intervention by sRDI produces an effect that is similar to or greater than that of sCT.

## Method

### 1. Experimental design

Interrupted time-series design was used. There are two factors: group factor(2 levels), and time(4 levels). Group factor includes the comparison between sRDI and sCT intervention. In sRDI group, subjects are asked to practice RDI imagery once a day using audio tapes. In sCT group, subjects are asked to reconstruct cognitions by completing a "Dysfunctional Thought Record" once a day. Time factors included screening test, pretest, posttest, and follow-up assessment.

### 2. Experimental time table

- I. Screening test: July 2002
- II. Pretest: November 2002

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- III. Intervention: November to December 2002
- IV. Posttest: December 2002
- V. Follow-up test: January 2002

the form.  
 B) For the following days.  
 Record observations from the practice.

- ③ Examples for record  
 In order to help subjects describe the seven aspects of their memory.

<For sCT group>

- ① Work sheet  
 Subjects should : (1)Describe stressful situation, (2)Name emotions and rate strength of emotions(0 to 100), (3)Describe Automatic thoughts, (4)Rate reliability of them (0 to 100), (5)Raise the proof which support automatic thought, (6)Raise counter proof, (7)Rate reliability of counter proof and rate strength of emotions (0 to 100).

- ② Examples for record  
 In order to help subjects to record seven items.

### 3. Experimenter

An audio tape was recorded by the author who has an EMDRIA Approved Consultant and Instructor certification.

The experimenter is a male undergraduate student in his senior year.

### 4. Subjects

Two hundred seventy-four undergraduate students completed a BDI in class. Thirty-seven students (nineteen males and eighteen females) whose scores were greater than mean plus 0.5 SD were abstracted. The BDI scores of male students were more than thirteen and those of female students were more than sixteen. Thirty-seven students were randomly divided into two groups. Nineteen students were assigned in the sRDI group and eighteen in the sCT group. When we phoned to ask for their participation in the experiment, we explained the experiment as an investigation of methods to reduce stress. Twenty-one subjects (ten for sRDI, four males and six females; eleven for sCT, five males and six females) agreed to participate.

### 5. Materials

#### I. Beck Depression Inventory

We used this scale to record trait changes in the screening test, pretest, posttest, and follow-up test.

#### II. Profile of Mood States

We used this scale to record state changes before and after the practice on the first and last day.

#### III. Materials used in intervention

<For sRDI group>

- ① Audiotape for stress-coping: Side A includes a 25-minute recording for the first day of the practice, Side B includes a 10-minute recording for the following days.

On side A, instructions for RDI without eye movement were recorded. Participants were requested to imagine various aspects of a positive memory. Specially designed recording sheets are used for recording subjects' response to the instruction.

On side B, instructions for accessing different aspects of the positive memory was recorded. Furthermore, at the end of the tape instruction to practice reducing stress with the positive memory was recorded.

- ② Recording sheets

#### A) For the first day.

Subjects are requested to record seven details of their memory on

### 6. Procedure

1. After getting informed consent, subjects are asked to complete BDI.
2. Subjects are instructed to practice stress reduction five to seven times a week. On the first day and the last day, they are instructed to complete POMS before and after practice.
3. At the posttest, subjects are asked to complete BDI, and worksheets are collected.
4. One month later, BDI was collected as follow-up data.

#### Result

One person in the sRDI group dropped out. Four other people were excluded because their pretest BDI was lower than mean of the normal population. I analyzed data from eight subjects in the sRDI group (three males and five females), and eight in the sCT group (three males and five females). Mean age of subjects was 19.81(Range was 18-24), and standard deviation was 1.38.

#### I. BDI (Trait change)

Figure 1 shows the trait change in BDI of sRDI and sCT groups.

At the screening test, the two groups did not significantly differ by t-test. Two factors' ANOVA (group factor: two levels \* time factor: four levels) was calculated. Only time factor was significant ( $F(3,42)=37.95, p<.01$ ). Tukey's HSD method indicated significant decrease only from pretest to posttest ( $p<.01$ ). In conclusion, both treatments improved depression and the effects were maintained until the one-month follow-up.

#### II. POMS (State change)

State change of POMS, that is from start to end of the practice was analyzed both on the first and last day in both groups. Two factors' ANOVA (group

factor: 2 levels by time factor: two levels) was calculated.

I. On the first day

T-A (Tension-Anxiety) scale: No main effects, no interaction was significant. No improvement in tension-anxiety was found in either group.

D (Depression-Dejection) scale: Only time factor was significant ( $F(1,14)=7.50, p<.05$ ). Both groups improved in depression.

A-H (Anger-Hostility) scale and C (Confusion) scale: Only time factor was marginally significant (respectively  $F(1, 14)=3.61, p<.1$ ;  $F(1, 14)=3.41, p<.1$ ). Both groups showed tendency toward improvement in anger-hostility and confusion.

V (Vigor) scale: Interaction of group and time factors was significant ( $F(1,14)=8.72, p<.05$ ). Tukey's HSD method showed that time factor is significant only in the sRDI group ( $p<.05$ ). At End Test, the sRDI group is superior to the sCT group ( $p<.05$ ). Vigor increased only in sRDI group.

F (Fatigue) scale: Interaction of group and time factors was marginally significant ( $F(1,14)=4.07, p<.1$ ). Tukey's HSD method, revealed that time factor was significant only in the sRDI group ( $p<.01$ ). Fatigue was decreased only in the sRDI group.

II. On the last day

T-A, D, and C scale: Only time factor was significant (respectively,  $F(1,14)=7.88, p<.05$ ;  $F(1,14)=5.70, p<.05$ ;  $F(1,14)=5.96, p<.05$ ). Both groups improved in tension-anxiety, depression, and confusion.

A-H, V, F scale: Only time factor was marginally significant (respectively  $F(1, 14)=3.19, p<.1$ ;  $F(1, 14)=3.99, p<.1$ ;  $F(1, 14)=3.90, p<.1$ ). Both groups tended to improve in anger-hostility, vigor, and fatigue.

III. Conclusion on POMS

In "tension-anxiety", improvement was not indicated on the first day, but indicated on the last day in both groups. In "depression" and "anger-hostility", improvement or tendency toward improvement was observed on both days in both groups. Improvement or tendency toward improvement was indicated in "vigor" and "fatigue", on the first day only in the sRDI group, but not in the sCT group. However, on the last day, both groups showed tendency toward improvement. On the first day, both groups showed tendency toward improvement in "confusion", and on the last day, they showed improvement.

### Discussion

The purpose of the present study is to compare the effects of RDI and CT in ameliorating depression. Our hypothesis is "Intervention by sRDI produced an effect that is similar to or greater than that of CT. Results support our hypothesis.

Long-term effects investigated by BDI, indicated that both treatments are equally effective for ameliorating depression, and the effects were maintained one month later in both groups. This suggested that both treatments are effective for helping depressive undergraduate students.

Short-term effects investigated by POMS on the first day, showed significant improvement only in the sRDI group. But, on the last day, both groups showed improvement and there were no differences between groups. The effect of sRDI treatment is more rapid since techniques may be easier to understand and practice. Subjects' reports supported this perspective. The effect of sCT is slower since techniques may take time to understand. Some subjects complained about the difficulty.

In conclusion, both treatments are effective, but RDI produces effects more quickly and easily than does CT. The rapidity of RDI could prevent clients from dropping-out even their motivation is maybe low. However, we should be skeptical of this generalization, since the procedures were modified to some degree for research purposes, for example in the use of audiotapes and the omission of eye movements. We only made audiotapes for RDI group since suggestive voice is important for guided imagery. However, we should also prepare audiotapes for CT to compare these two more fairly. Furthermore, we omitted eye movement considering the issue of client safety. Eye movement could be a key element of RDI, and by the omission, we could weaken the effects. Nevertheless, the results are of significant importance since even in the form of self-directed administration, RDI is equally as effective as CT. The effects of these treatments should be tested on more subjects. We should consider the importance of each element in pursuing effective methods of securing a stable outcome. The combination of these two methods (First RDI, then CT) might have more secure effects.

### Reference

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Table 1. Outline of audio tape for stress reduction

Side A(for the first day)	Side B(for the following days)
1. Complete POMS.	1.Practice using the memory.
2.What is your stress situation?	2. Practice using the memory with a light stress.
3.What trait do you need to cope with the situation?	3.Please make notes about your observation.
4.Do you have any experience that by recalling, you can cope with the stress?	
5.Imagine the experience. (1)What can you see? (2)What can you hear? (3)What can you smell? (4)What can you feel in the air? (5)What can you feel on the skin? (6)What feeling do you have? (7)Where do you feel it?	
6.After imagining this concrete imagery, how do you feel?	
7.Name the memory.	
8.Practice using the memory with a light stress.	

Table 2. Procedural outline of sRDI and sCT groups.

	sRDI group	sCT group
The first day	1.Complete POMS.(Start Test)	1.Complete POMS. (Start Test)
	2.Using audio tape side A, complete seven aspects on a recording form.	2.Record seven items on the worksheet.
	3.Complete POMS.	3.Complete POMS
Between	1.Practice using audiotape side B.	1.Record six items on the worksheet.
	2.Record observations on the recording form.	
The last day	1.Complete POMS. (Start Test)	1.Complete POMS. (Start Test)
	2. Practice using audio tape side B.	2.Record six items on the worksheet.
	3. Record observations on the recording form.	
	4. Complete POMS.(End Test)	3. Complete POMS. (End Test)

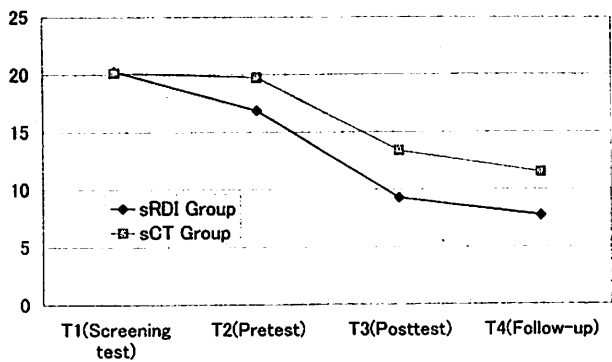


Figure 1. Change of Mean BDI Score of sRDI & sCT Groups

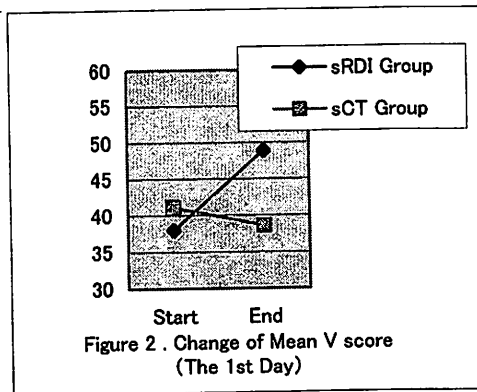


Figure 2 . Change of Mean V score (The 1st Day)

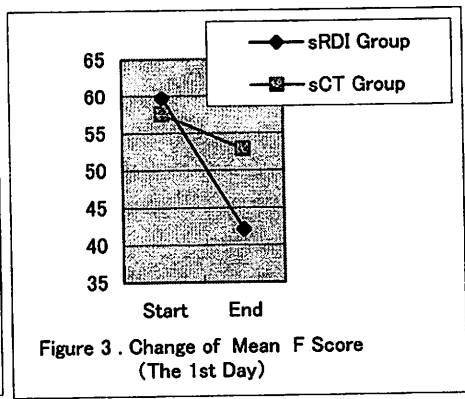


Figure 3 . Change of Mean F Score (The 1st Day)